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THE PROPERTIES AND USES OF THE CALABAR BEAN.

[Translated for the Boston Medical and Surgical Journal.]

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MESSRS. EDITORS,—As an article in the *Annales d'Oculistique* contains the best statement I have seen of what is known of the Calabar bean *(Physostigma venenosum)*, with an account of experiments in which I myself took part at Utrecht, I have made a translation of its important portions, hoping it may interest your readers. Not to occupy too much space in your pages, I omit a long botanical description, and will merely premise, that the bean is the product of a climbing plant found at Calabar, on the Western Coast of Africa, and employed among the natives for the trial by ordeal, being publicly administered to accused persons as a supposed test of their innocence or guilt. It is extremely poisonous; but if the individual escapes, in consequence of the supervention of vomiting, he is considered innocent, and his accuser is submitted to the same criterion. The bean itself is about an inch in length, and covered with a dark, almost horny envelope. The article is by Mons. Warlomont, of Belgium.

The materia medica is composed of a large number of agents, styled therapeutic, which have found a place there, thanks to the results obtained by empirical experiment, but of many of which the value is still contested. Those only which rest upon a well-determined physiological effect have gained a permanent place, for they alone have a firm and solid basis. Opium, belladonna, digitalis, are legitimately in possession of the place which their physiological properties have gained for them, and from which we have educed, without much difficulty, the therapeutic applications from which our science has derived such numerous and important advantages.

It is, then, a fortunate thing for medicine that an agent has been discovered, having well-marked physiological properties which had never before been observed in any known substance, and offering a new horizon to therapeutics by filling a void which has long been recognized and deplored, but which will henceforth exist no longer.

Whilst we possessed in belladonna, hyoscyamus, stramonium and their alkaloids, infallible means for dilatation of the pupil, which is so often necessary in the treatment of diseases of the eye, the power of contracting the pupil did not belong to any known product. Opium acted to a certain extent, it is true, in this way; but its action was feeble, irregular and uncertain, and only very limited and doubtful results could be obtained from its use. It is not thus with the *Calabar bean;* its power of contracting the pupil is energetic, prompt and incontestable, and physiology as well as therapeutics has already derived advantages from it.

Dr. Daniell prepared a short paper on the poisonous properties of the Calabar bean, in 1846; but it was not till 1862 that its anti-mydriatic qualities were announced by Dr. Frazer, of Edinburgh, who discovered them, and brought specially to notice by Dr. Robertson, who still further investigated them and pointed out to the profession their great practical value.

ACTION OF THE CALABAR BEAN ON THE EYE.

1. *Effect on the Pupil.*—When even a very small amount of the extract of Calabar bean has been introduced within the eyelids, the pupil begins to contract considerably in the course of eight or ten minutes—usually without pain or inconvenience. If the dose is larger, or applied to a sensitive individual, it may give rise to palpebral, orbital or frontal pain, sometimes severe and of considerable duration. Sometimes the eye itself feels heavy and painful; but these symptoms are only rarely exhibited. Sometimes the pupillary contraction takes place slowly and by regular progression, sometimes by starts and oscillations.

When an eye has been submitted to strong and repeated doses of extract of Calabar, and its full action upon the pupil has been established, the pupil is capable of still further contraction if exposed to concentrated solar rays, and, if the same eye is placed suddenly in a dim light, slight dilatation of the pupil takes place. The Calabar, therefore, does not determine the maximum of contraction of which the pupil is capable.

As regards the antagonistic effects of belladonna and the Calabar bean, it has been pointed out by all who have experimented that the duration of the effect of the latter is less than that of the former. Thus, when by large or repeated doses of the anti-mydriatic, dilatation of the pupil previously induced by atropia has been overcome, not more than an hour has passed before the atropia has gained the ascendancy and neutralized its antagonist.*

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* It is not unlikely that the apparent comparative inefficiency of action of the Calabar may be due to the fact that most of the experiments have been made with "Calabar paper," prepared by repeated dippings in a solution of the extract of the bean, or at most with the

2. *Effect upon the Ciliary Muscle and the Power of Accommodation.*—Its action upon the pupil is neither the sole nor the most interesting effect produced upon the ocular system by the Calabar bean. At the same that it narrows this aperture it acts also upon the accommodation; but these effects are wholly independent of each other, for the contraction of the pupil often persists for a long time after the disturbance of the function of accommodation has subsided. This action consists in an increase of the refraction of the eye, and consequently in bringing yet closer the near point of distinct vision. This latter phenomenon last longer than the other, but rarely beyond an hour and a half. After this time the muscles of accommodation present a singular condition, resulting from a sort of strabismus in the tensors, so that coöperative action of the two eyes, in binocular vision, becomes difficult.

In the accompanying tables, Dr. Hamer, of Utrecht, has given most accurate observations as to the duration and extent of the modifications of accommodation.

FIRST EXPERIMENT, MADE WITH A SQUARE OF CALABAR PAPER.

Subject of the Experiment.	Age.	Which Eye.	Minutes after the Application.	Far Point.	Near point.	Latitude of Accommodation.	Acuteness of vision. Without glasses.	Acuteness of vision. With glasses.	Size of pupil in millimetres.
Mr. Schuurman.	24	Right.	0	6 inches.	3 in. 3 l's.	$\frac{1}{7\frac{1}{11}}$		$\frac{20}{30}$	4.96
			10	5 "		$\frac{1}{9\frac{2}{7}}$			4.05
			35	3 "	2 in. 5 l's.	$\frac{1}{12\frac{3}{7}}$			1.60
			60	4 "		$\frac{1}{6\frac{1}{9}}$			1.56
			155	6 "		$\frac{1}{4\frac{3}{5}}$			

Generally the modifications of the refraction follow immediately upon the production of myosis. The increase of refraction con-

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extract itself, and not with the active principle (or Calabarine), which, if hitherto obtained at all, has probably been imperfectly prepared—the extremely small amount of the bean which could be found in Europe not having allowed of experiments on a large scale. Of course, the preparations of the *extract* of the bean could not be expected to compare, in degree of power, with solutions of atropia, the *active principle* of belladonna. W.

tinues some ten minutes from the time it begins to manifest itself; it then decreases, and ordinarily has disappeared at the end of an hour. It is generally equivalent to a lens of eight or ten inches focus.

At the same time, another phenomenon equally remarkable is observed: the near point of distinct vision is brought as much nearer the eye as it would be by a glass of twenty-four inches. If the dose of Calabar has been feeble, the far point remains unchanged, even though the ciliary muscle is very active; the range of accommodation in these cases is therefore increased by the whole extent to which the near point has been approximated. On the contrary, under the influence of a high dose the far point may be brought nearer, by the exercise of the power of accommodation.

In Experiment I., the paper produced irritation of conjunctiva. It was removed at the end of five minutes. Reading, with the book held near the eye, caused a sensation of pain; but not when reading large letters at a distance. After 155 minutes the right eye, with the aid of a concave glass of eight inches, saw much better than the left.

SECOND EXPERIMENT.

Subject.	Age.	Which Eye.	Minutes after Application.	Far Point.	Near Point.	Latitude of Accommodation.	Acuteness of vision.		Size of pupil in millimetres.
							Without glasses.	With glasses.	
Dr. Williams.	42	Left.	0	∞ (Infinite distance.)	7 in. 9 l's.	$\frac{1}{7\frac{3}{4}}$	$\frac{18}{20}$		3.40
			10	"		"			3.04
			20	36 inches		$\frac{1}{9\frac{7}{8}}$			2.32
			30	24 "	5 " 11 "	$\frac{1}{7\frac{6}{7}}$			1.90
			60	45 "	6 " 3 "	$\frac{1}{7}$			1.90
			72	80 "		$\frac{1}{6\frac{2}{3}}$			1.44
			85	∞		$\frac{1}{6\frac{1}{12}}$			

Ten minutes after the application of the paper, pain was felt in the orbit. The paper was removed after five minutes. Even when the diameter of the pupil was reduced to 1.90 millimetres, it still contracted when exposed to strong light. Objects appeared larger.

THIRD EXPERIMENT.

Subject.	Age.	Which Eye.	Minutes after Application.	Far Point.	Near Point.	Latitude of Accommodation.	Acuteness of vision. Without glasses.	Acuteness of vision. With glasses.	Size of pupil in millimetres.
Dr. Hamer.	25	Right.	0	80 inches.	4 in. 7 l's.	$\frac{1}{4\frac{6}{7}}$	$\frac{20}{20}$	$\frac{21}{20}$	4.13
			5	20 "		$\frac{1}{6}$			
			12	7 "		$\frac{1}{9\frac{1}{3}}$			3.24
			20	7 "	4 " "	$\frac{1}{13\frac{1}{2}}$			
			25	7 "	3 " 9 "	$\frac{1}{8\frac{1}{3}}$			2.53
			43	7 "	"				1.63
			50	10 "		$\frac{1}{6}$		$\frac{20}{20}$	1.30
			55	12 "	3 " 9 "	$\frac{1}{5\frac{1}{2}}$			
			65	18 "		$\frac{1}{4\frac{3}{4}}$			1.10
			70	20 "		$\frac{1}{5}$			
			90	24 "		$\frac{1}{4\frac{1}{2}}$			1.00
			110	36 "		$\frac{1}{4\frac{2}{3}}$			
			140	80 "		$\frac{1}{4}$			

Four minutes after the application of the paper to the conjunctiva, painful contractions, like electric shocks, were felt in the lower lid. After fifteen minutes much pain in the globe, which was still further augmented by reading at the distance of a foot. At the end of fifty minutes the iris appeared to bulge forward and to have become insensible to light; the painful sensations persisted; to the right eye distant objects seemed less bright, white paper appearing brown; muscæ volitantes were seen. The spasm of the accommodative power declared itself after twenty minutes, and had not wholly passed off eight hours after. Twenty-four hours after the application of the Calabar, the pupil was still very much smaller than that of the right eye.

In experiments made by Dr. Wecker, of Paris:—in Mr. Pactovan, whose near point was 3 inches, it was brought to 1¾; in Dr. Hunt, from 3 to 1⅜; and in Dr. Salazar, from 4 to 3 inches.

These results perfectly accord, as will be seen, and establish the propositions we have advanced, which are in a great measure borrowed from Dr. Hamer's excellent work, already mentioned.

3. *Effect on Vision.*—At the moment that contraction of the pupil is produced, and that consequently an obstacle is presented to the introduction of a normal amount of light, there is a sensation as if it had become twilight. According to M. de Graefe, there is a moment when the acuteness of vision is diminished one third. This difference, however, is scarcely observed when the light is intense, but is quickly noticed if the light is dim. In some short-sighted persons a sudden and very transient improvement of vision for distant objects has been observed, when a great degree of myosis had been rapidly brought on.

Astigmatism has also been sometimes produced, which Dr. Robertson explains on the supposition that the solution of Calabar had acted unequally on different parts of the ciliary muscle. This same difference of effect would explain the irregular contraction of the pupil which has sometimes been observed.

4. *Mode of Action on the Organ of Vision.*—We know that by irritating the sympathetic nerve we cause dilatation of the pupil; but, section of this nerve increases yet more the contraction caused by large doses of Calabar. The Calabar acts on the sphincter of the iris by irritation, by causing spasmodic action of the third pair; as an antagonist of atropia, which acts by irritation on the radiating fibres of the iris and the tensor choroidæ, through the sympathetic. This is fully demonstrated, first, by the fact that the pupil contracts much more under its influence than it does after paralysis or section of the sympathetic; and, secondly, because the pupil may be acted on even more fully by the Calabar when the sympathetic has been cut. Prof. Donders, of Utrecht, has been able to produce considerable enlargement of the pupil already under the influence of the Calabar, in a rabbit, by exciting the sympathetic;

and having, in another rabbit, cut the sympathetic on one side and applied the Calabar to both eyes, he obtained the greatest amount of contraction on the side where the nerve had been cut.

Like atropine, calabarine acts only on the eye to which it has been applied, and, like it, acts by penetrating to the anterior chamber. It even acts on eyes where the cornea has been perforated, an important fact as regards therapeutics.

THERAPEUTIC USES OF CALABAR BEAN.

1. *In Mydriasis.*—Artificial mydriasis may be corrected, to a certain extent at least, by the use of this remedy. After having dilated the pupil, for an examination of the deep-seated portions of the eye with the ophthalmoscope, we may spare the patient the annoyance caused by a considerable duration of this dilatation, by introducing within the lids a little of one of the preparations of the extract of Calabar bean. The exact amounts requisite to completely neutralize a given strength of a solution of atropia remain to be determined.

Mydriasis, when existing pathologically, may be advantageously modified by the extract of Calabar. Even when the iris has become completely insensible to light, the pupil contracts promptly under its application. To ensure its efficacy, the remedy must be continued for a time. Messrs. de Graefe, Workmann, Hulke and Hart have already reported cases of radical cure of paralysis of the third pair, with mydriasis, where the power of accommodation had been wholly or partially lost. Mr. Soelberg Wells reports an instance of the permanent cure of a patient affected with rheumatic paralysis of the constrictor of the pupil and of the ciliary muscle of the right eye. Vision was so imperfect that the patient could not read, or thread a needle, with both eyes open. She had diplopia and amblyopia in the right eye. The application of the extract to both eyes demonstrated its special action upon the power of accommodation. The pupil of the healthy eye contracted very much, and that of the affected eye, which measured three and a half lines in diameter, was diminished to two thirds of a line within a quarter of an hour after the application. The sight was at once so much improved in this eye that she could read the finest print.

Glaucomatous mydriasis, if the iris has not become completely atrophied, does not prevent the action of the Calabar bean. It has the effect, in this condition of things, to contract the pupil, render the iris tense, and thus offer a larger surface to the instruments with which it is taken hold of in performing iridectomy. The danger of wounding the crystalline is at the same time diminished.

1. *In Paralysis or Fatigue of the Accommodative Power.*—Among the organs which may remain paralyzed after an attack of diphtheria, is to be reckoned the ciliary muscle; the power of accommodation is thus wholly or partly lost. Severe fevers, and especially

typhoid fever, also sometimes leave behind them a general atony, in which the organs of accommodation may share. In both these cases the Calabar bean may be of great service in restoring the contractile power of the ciliary muscle.

3. *In Diseases and Anomalies of the Refractive Power.*—The power possessed by the Calabar bean of bringing the point of distinct vision nearer to the eye, indicates its use in cases where this point is at too great a distance, as, for instance, in hypermetropia. Persons who require spectacles for seeing small objects may replace them, to a certain extent, if they desire it, by the use of a Calabar eye water. It remains, however, to be determined by experience whether the action of this remedy may be indefinitely kept up, as in the case of atropia, or whether its influence will after a time cease to be felt. We know, moreover, that there is a certain degree of diminution of the clearness of vision (independent of what results from the contraction of the pupil) under the influence of the bean: these facts may in a degree counterbalance the advantages to be gained as regards range of vision. Furthermore, the eye sometimes becomes slightly heavy and painful after its application, which should also make us careful in our experiments.

The action of the Calabar may also be useful in myopia, since, by bringing the point of most distinct vision nearer, without approximating the far point, it enlarges the latitude of accommodation; and it may sometimes be of use to the short-sighted to bring their near point yet closer.

4. *In Wounds at the Margin of the Cornea, with Hernia of the Iris.*—As we have in atropia an efficient means of drawing the iris towards its periphery, and preventing it from becoming implicated in an ulceration or a wound of the centre of the cornea, so we have in the Calabar bean a means of averting hernia of the iris, which may threaten to take place through lesions near the corneal circumference.

MODE OF PREPARATION AND USE.

The only active part of the plant is the bean itself, its hard, horny envelope being discarded. Its alcoholic extract, prepared by exhausting the powdered bean with alcohol and evaporating the solution, may be applied by taking a minute quantity of it upon a fine pencil, moistened with water, and applying it to the conjunctiva of the lower lid. The specific action will be observed in five minutes.

Mr. Streatfeild's ingenious invention of a fine tissue paper impregnated with a solution of atropia of given strength, so graduated in squares that one square shall represent a certain quantity of the solution, has also been applied to the preparation of paper impregnated with a solution of the extract of Calabar—and it is in this form, principally, that the remedy can be obtained, the small quantity of the bean to be found in Europe having been entirely insufficient to meet the demand for the extract. A square of this paper, measuring an eighth of an inch, placed inside the lower lid, begins to act in twenty minutes, and its effects continue several hours.

Another excellent preparation is a solution of the extract in glycerine—two and a half grains of the extract in one hundred minims of pure glycerine.

CASE OF THE LATE DR. DALTON.

[Reported to the Boston Society for Medical Improvement, and communicated for the Boston Medical and Surgical Journal.]

BY J. MASON WARREN, M.D.

DR. WARREN gave the following account of the illness and death of the late Dr. John C. Dalton, the valuable and distinguished physician whose case has excited so much interest both among the medical profession and the public generally:—On Saturday evening, Jan. 2d, Dr. Dalton slipped on the ice near his own house, falling upon a piece of iron, the model of a cannon, about six inches long and one inch in diameter, which he had in his pocket, and which was forcibly driven against his left side. He went home and lay upon the sofa until bed-time, complaining of general uneasiness, and expressing the feeling that he had received some ill-defined injury.

In the middle of the night he was attacked with violent pain in the left hypochondriac region, extending thence over the whole abdomen. He sent for Dr. Edward H. Clarke, under whose charge he remained during his illness. At this time he expressed the fear that he was suffering from intussusception of the intestine. Large doses of opium were given without material relief, after which ether was administered by inhalation, and the effect of it was kept up during the greater part of thirty-six hours. He was seen on Sunday afternoon by Dr. Warren, who continued in attendance with Dr. Clarke, from day to day during the remainder of his illness. After a very critical examination, no positive evidence could be discovered of injury to any internal organ. The bowels had been thoroughly evacuated by an enema immediately after the first visit of Dr. Clarke. He had passed no urine, nor was there any sign of any collection in the bladder. At his own request, however, a catheter was passed into the urethra, but it was arrested at the neck of the bladder by spasm, and no farther effort was made. The absence of the secretion was attributed in part to the great quantity of opium which he had taken, together with the ether which he had inhaled during so many hours, and which was attended by profuse perspiration. The stomach having become tranquillized after the etherization was stopped, and some hot drink administered, warm applications being at the same time made over the pubes, micturition took place spontaneously, no abnormal appearance being shown by the urine, or in the urinary organs, during the remainder of his illness.

There had been at first slight marks of contusion on the abdomen and lower part of the chest, which, however, soon disappeared. In the hypochondriac region, for the first day or two, there was an induration of limited extent, which appeared, however, to be due as much to an instinctive action of the muscles to resist pressure as to any internal injury caused by the contusion. There was more dulness in the left lumbar region than in the corresponding situation on the right side, and this dulness gradually increased in extent as the case advanced. The respiration was perfectly normal in the very lower part of the chest, where the injury was received. There was no tenderness on pressure when Dr. W. saw him, either in the chest or abdomen, although this symptom had been previously noticed; and from the general absence of decided symptoms in the regions noticed, it was surmised that there might be an injury of the spleen, with some effusion of blood. On Monday, his symptoms seemed to be of a favorable character; on Tuesday morning there was decided evidence of pneumonia in the lower part of the left lung, which gradually increased, involving more or less of both lungs, until death ensued on Friday, at 4 o'clock, P.M. Dr. Dalton had complete possession of his senses until within a short period of his death, and arranged all his affairs with coolness and deliberation.

There has been a remarkable mortality in the family of Dr. Dalton within a short time, three of his brothers and two sisters having died within the past five years, most of them suddenly; and it is worthy of mention that one of his brothers, who received a fall on the ice, somewhat like his own, was seized after a few days with double pneumonia, which terminated fatally.

The following account of the autopsy is furnished by Dr. Ellis. There was extensive pneumonia, involving both lungs, the left lower lobe being gray, the corresponding part of the right still red. The lower part of the upper right lobe was similarly affected, and the whole of the left highly œdematous.

A small amount of blood was seen upon the peritoneal surface on opening the abdominal cavity, but the subperitoneal tissue was extensively infiltrated with the same, which extended into the mesocolon, omentum and other folds. Around the left kidney was a large blackish coagulum, and in the hilus a transverse fracture, perhaps an inch long and a third of an inch in depth at the deepest part. To this the coagulum adhered firmly.

Both kidneys were large, and quite soft. On examining a portion with the microscope, the tubuli were found crowded with granular epithelium, so that all appearance of a tube was lost.

The spleen was small and quite soft.

The liver was of a pale-red color, but in other respects normal.

ON A SIMPLE DRESSING FOR RECENT BURNS.

By John H. Packard, M.D., of Philadelphia.

In the spring of 1853, while an officer of the Philadelphia City Dispensary, in Fifth Street, I was called one day to attend a German manufacturer of fancy soaps, in the neighborhood, who had been severely burnt over the face, one arm, and the side, by the blazing up of a quantity of alcohol. I visited him for several days, using from the outset the "carron oil," or mixture of linseed oil and lime water, as I had been taught. But this failed to allay his pain, even with the aid of anodynes given internally; and becoming dissatisfied, he dismissed me, and procured the services of an old friend of his, formerly a surgeon in the Austrian army. On my seeing him a short time afterwards, he told me that his friend had given him immediate relief by the application of fresh lard; and the appearance of the injured parts was indeed surprisingly favorable.

Bearing this case in mind, I made trial of the plan suggested as soon as an opportunity offered itself, and was so well satisfied with the result that I continued its use. Since that time there have come under my care a great many cases of burns and scalds of all degrees of extent and severity; but none in which the simple dressing above mentioned has not answered well. It has repeatedly, I do not know how often, occurred to me to see patients who have had other dressings applied, but whose sufferings continued unrelieved until the lard was put on.

Some of these instances have impressed me very forcibly. One was that of a child about three years of age, to whom I was accidentally called. He had pulled a kettle of boiling water off a table upon himself, and was badly scalded over the face, upper part of the chest, and arms. His mother had applied linseed oil and lime-water, but to no good purpose; he was screaming and crying violently with pain. Some fresh lard having been brought, I dressed his injuries with it, when he immediately ceased crying, and in a few minutes fell into a sound sleep. His recovery was very rapid.

Another case occurred to me a week or two since. A child four years old was reaching for some plaything on a mantel piece over a grate, when his clothes (he was in petticoats) swung out against the fire, and he was instantly in flames. Before the fire could be put out he was burned over both thighs, both arms, the body, the back of the head, and slightly over the face. When I saw him, about two hours afterwards, he was suffering severe pain, and very restless, although dressed with carron oil. As soon, however, as the entire burnt surface was covered with fresh lard, he became easy, and remained so until his death, which took place in about eighteen hours from the time of the accident.

As has been already stated, these cases are among very many others which have come under my notice. They impressed themselves on my mind because of the very marked relief given by the lard when other means had failed. Moreover, in children, we can as a general rule estimate the amount of suffering by the amount of complaint made; whereas, adults will often either exercise self-restraint, or subdue the expression of pain from the mere expectation of speedy relief.

The "carron oil" is well known to the public as well as to the profession; so that it is often applied by the bystanders or friends, in cases of burn, before the arrival of the surgeon. Its use is advocated in preference to that of any other article, in an able paper on the injuries in question, contributed by Dr. John Ashhurst, Jr., to this Journal for July, 1862; and this is the only one of the points so well set forth by him, to which I would take exception. The smell of linseed oil is very offensive and sickening, while the lime-water, never wholly incorporated with the oil, is apt to evaporate at many points, leaving the linen or other stuff upon which it is spread sticking to the skin. By covering the dressing with oiled silk, we may indeed obviate this annoyance; but oiled silk, although usually at hand in a hospital, is seldom to be had in any quantity in private houses.

What we want to do, in dealing with a burn, as regards local treatment, is simply to protect it altogether from irritation; reference being had here, to the early period of the case only, and not to its later stages, when stimulation is often called for. If, therefore, we cover the injured surface with a bland, unirritating and air-proof medium, our object will be gained. Such a medium I believe to be best furnished by fresh lard.

This material can almost always be procured in any desired quantity, and at the shortest notice. If salted, it can be easily deprived of the salt by washing with water. My own practice is to spread it thickly on pieces of very soft old linen or muslin (old table-cloths are excellent), and then tear off pieces of suitable size to amply cover the affected parts. The great object is to apply the dressing accurately to the surface. For the face, a mask may be readily made of a piece of the spread stuff, the eyelids, or ears, if involved, being first covered with small bits of it. When a limb is concerned, it is better to tear off strips and wrap the part lightly with them, like a common bandage, except that no reverses are made. Or reverses may be made, the surface of each being smeared with the lard before it comes on the skin. As it is impossible to dress burns neatly, we may as well discard at the outset all idea of doing so, and aim wholly at promoting the comfort of the sufferer.

In very warm weather, or when the patient is to remain in a heated atmosphere—an important advantage in almost every case of severe and extensive burns—the lard may be deficient in "body;" it is then necessary to add to it a small proportion of simple cerate.

About one part of cerate to four or six of lard will usually answer the purpose.

So much has been written on the treatment of burns, from the earliest times to the present day, that it may seem presumptuous to attempt to throw any new light on the subject. But, so far as my reading goes, the simple dressing I have now advocated has never been more than mentioned by any writer, nor have I met with any knowledge of it among my professional friends. So completely has it satisfied me, after a very extensive trial, that I feel bound to make its value known to others, confident that they will not be disappointed in its effects.—*Amer. Jour. of the Medical Sciences.*

NOTE ON FORMOSA CAMPHOR.

By Robert Swinhoe, F. G. S., &c., H. M. Consul at Taiwan.

The manufacture of this article has for some years been monopolized by the Taotai (or head Mandarin) of the island, and its sale farmed out to wealthy natives. In former years, a good deal of the drug was clandestinely produced, and smuggled across to China, where it was largely bought up by foreign speculators, and carried to Hongkong for shipment to Calcutta, at which place it finds the readiest market, being used by the natives of Hindostan for lubricating the body and other domestic purposes. But now its monopoly is so closely watched that almost the entire trade in it falls to the lucky individual whose Chinese agents can secure the monopoly. This bad system has occasioned the price of the article in Hongkong to increase considerably in value, and to make the profits accruing to the fortunate monopolist almost fabulous. The cost of the drug, I learn, amounts to only six dollars at its place of manufacture. The monopolist buys it from the Mandarin at 16 dollars the pecul, and sells it in Hongkong at 28 dollars. The gigantic laurel *(Laurus camphora)* that yields the camphor, covers the whole line of high mountains extending north and south throughout Formosa. But as the greater part of this range is in the hands of the aborigines, the Chinese are able to gain access only to those parts of the mountains contiguous to their own territories that are possessed by the more docile tribes. The trees, as they are required, are selected for the abundance of their sap, as many are too dry to repay the labor and trouble of the undertaking. A present is then made to the chief of the tribe to gain permission to cut down the selected trees. The best part of the tree is secured for timber, and the refuse cut up into chips. The chips are boiled in iron pots, one inverted on another, and the sublimated vapor is the desired result. The camphor is then conveyed down in carts of rude construction, and stowed in large vats, with escape-holes at the bottom, whence exudes an oil, known as *camphor-oil,* and used by Chinese practitioners for its medicinal properties in rheumatic diseases. Samples of this oil have been sent home, and it may eventually become a desideratum in Europe. From the vats the camphor is stowed in bags to contain about a pecul each, and is thus exported. The Chinese government has empowered the Formosan authorities to claim on its account all the timber produced by the island for ship-building purposes; and it is on this plea the Taotai appropriates the prescriptive right of dealing in camphor. About 6000 peculs of the drug are annually produced in the neighborhood of Tamsuy.—*Am. Jour. of Pharmacy,* from *London Pharmaceutical Journal,* Dec. 1863, *Extracted from Paper read before the British Association at Newcastle.*

Bibliographical Notices.

On Asthma: its Pathology and Treatment. By HENRY HYDE SALTER, M.D., F.R.S., Fellow of the Royal College of Physicians, &c. &c. Philadelphia: Blanchard & Lea. 1864.

No disease has caused more suffering among men, or more guesswork in pathology and empiricism in therapeutics than asthma, and any book which promises to enlighten us with regard to its nature will find eager readers. Many may be already familiar with its pages, in the form of signatures, as they have been issued during the past two years, by the publishers of the *Medical News and Library,* who now offer it to the public in a more convenient shape. The author first considers the various theories in vogue in relation to its nature, and then explains his own views in the following propositions:—

"1. That asthma is essentially, and, with perhaps the exception of a single class of cases, exclusively, a nervous disease; that the nervous system is the seat of the essential pathological condition.

"2. That the phenomena of asthma—the distressing sensation and demand for extraordinary respiratory efforts—immediately depend upon a spastic contraction of the fibre-cells of organic or unstriped muscle, which minute anatomy has demonstrated to exist in the bronchial tubes.

"3. That these phenomena are those of excito-motory or reflex action.

"4. That the extent to which the nervous system is involved differs very much in different cases, being in some cases restricted to the nervous system of the air-passages themselves.

"5. That in a large number of cases the pneumogastric nerve, both in its gastric and pulmonary portions, is the seat of the disease.

"6. That there is a large class of cases in which the nervous circuit between the source of irritation and the seat of the resulting muscular phenomena involves other portions of the nervous system besides the pneumogastric.

"7. There are other cases in which the source of irritation, giving rise to the asthmatic paroxysm, appears to be central—in the brain; consequently, in which the action, though excito-motory, is not reflex.

"8. That there is yet a class of cases in which the exciting cause of the paroxysms appears to be essentially humoral."

The chapters which follow, in relation to the clinical history of asthma, its ætiology and consequences, are very clearly written and are full of interesting matter. Under the head of Varieties of Asthma, we notice a form produced by contact with the fur of the domestic cat, which the author speaks of as previously undescribed, and in the cases he had observed the symptoms were produced only by playing with the animal, but we have seen a gentleman so susceptible to this strange influence as to recognize the unseen entrance of a cat into a crowded room.

The treatment of asthma is fully discussed, and forms, perhaps, the most valuable portion of the book. Two methods are omitted, however, from the author's list of remedies, which certainly deserve a high rank; namely, the inhalation of arsenic fumes, and the internal use of sulphur. Of the action of the former in controlling the paroxysms we have heard many favorable accounts, and we know of three cases in which life-long and constant sufferers from this disease have been completely cured by the administration of a few grains of washed sulphur daily for several months. This mode of treatment was introduced by Dr. Duclos, of Tours, a translation of whose article upon the nature and treatment of asthma will be found in Vol. LXIV., pp. 484 and 497 of this JOURNAL. At the close of the volume there will be found an interesting series of narrative cases.

The Medical Formulary. By BENJAMIN ELLIS, M.D. Eleventh Edition—by ROBERT P. THOMAS, M.D. Philadelphia: Blanchard & Lea. 1864.

IT seems hardly necessary to say more of this book than to announce the appearance of the eleventh edition under the able direction of Prof. Thomas, of the Philadelphia College of Pharmacy. It has been brought up to the present state of medical science by the addition of a large amount of new matter, and has been arranged in conformity to the nomenclature of the new Pharmacopœia. We notice the introduction of many prescriptions and preparations which are used with great success by foreign physicians and surgeons, but which are still comparatively unknown here. The work in every respect is praiseworthy, and should be found in every medical library.

Synopsis of the Course of Lectures on Materia Medica and Pharmacy. By JOSEPH CARSON, M.D. Third Edition, revised. Philadelphia: Blanchard & Lea. 1864.

THIS book is an outline of the author's lectures delivered at the University of Pennsylvania, and is designed as a convenient guide to them in their studies in this extensive branch of our art. It takes the place, to a certain extent, of the large works on Therapeutics and Pharmacy, but should only be used in connection with them. The volume also contains three lectures on the operation of medicines through the medium of the nervous system and by absorption.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, JANUARY 28, 1864.

IS THERE DANGER FROM OVER-STUDY?—We find the following in a recent number of the *Medical Times and Gazette*:—

"Dr. Ellis, in his inaugural address to the students of the Catholic University, Dublin, says:—

"'Be not afraid of injuring your health or shortening your lives by hard study. I have had many opportunities of observing the causes of death in persons of studious habits, and I never could fairly attribute the death of a single person to excessive study. In order to satisfy your minds on these points, I have procured a list containing the names of the most studious men who have lived during the last two centuries, together with the ages at which they died:—Sir Isaac Newton died at the age of 85 years: Dr. Heberden, 90; Dr. William Harvey, 79; Galileo, 78; Sir John Pringle, M.D., 75; Sir Thomas Brown, M.D., 76; Copernicus, 70: Dr. Edward Jenner, 74; the Most Rev. Dr. Whately, 77; Daniel O'Connor, 75; Lord Lyndhurst, 91. There are many public men still living and capable of discharging the duties of their respective offices with something like the vigor of youth, although they are very far advanced in years. For instance, the First Lord of the Treasury, Lord Palmerston, is now in his 80th year, yet he is capable of taking an active part in the affairs of the nation, and sitting up of a winter's night answering questions which must be occasionally very disagreeable. Lord Brougham is in his 95th year [quere, 85th?], and yet he is at the head of the savans, delighting his auditory with his learning and eloquence. There is a judge at present sitting on the Queen's Bench in this city 87 years old, with a vigorous intellect, and his friends say that he has made up his mind neither to die nor retire so long as the present government remain in office!'"

Probably the audience addressed by the worthy Professor was in no very great need of the assurance thus given, that there was no danger of injuring themselves by hard study. We cannot recollect a single instance where a medical student has fallen a victim to such devoted application. The Bob Sawyer element in student life is generally quite strong enough to counteract the tendency to such self-immolation. Nevertheless, the paragraph above quoted contains a very glaring fallacy, too obvious, perhaps, to need pointing out, and yet precisely such as an *ad captandum* lecturer or public speaker will gladly take up—such as we hear used every day, to defend the most extravagant doctrines of hygiene or physiology. Because the great men whom Dr. Ellis has selected from the last two or three centuries did not destroy themselves by the study by which they achieved their gigantic reputations, therefore the same amount of achievement may be looked for from common men without over-exhaustion or serious injury! It is the same as saying that there is no danger in attempting any great feat requiring immense muscular strength. Dr. Windship lifts a ton, more or less, without the least injury to himself, so, of course, no one can strain his *longissimus dorsi* or rupture a flexor tendon by trying to do the same thing! The fable of the frog and the ox is worth remembering.

Seriously speaking, we think that such teaching is likely to produce very bad effects. Dr. Ellis may never have been able to trace the death of the studious people whom he has known to excessive study, but it does not follow that death cannot be produced in this way, and that there is no need of wise caution in this as in all other matters pertaining to the right use of our faculties. We know not how extensive his field of observation may have been, but we know *we* have seen instances of great injury from excessive mental application. In fact, this is the merest truism in an American community. Teachers, however, do not yet appreciate this truth, and it needs constant reiteration to keep the public alive to its reality. It was only last week that we saw a little girl, some 12 years of age, writhing and jerking with the spasms of severe chorea, unquestionably produced by overstudy. She was passionately fond of her books, passed all the hours, from nine in the morning until five in the evening, with the exception of an hour's intermission at noon, in school, voluntarily prolonging her stay an hour after the morning session to assist the teacher in drilling other pupils less proficient, and in the evening studying assiduously until nine o'clock. "But does your little girl have no play time during the day?" we asked of her mother. "None," she answered, "she is so fond of her books that I can hardly drive her out of doors." We might multiply such instances, if necessary. Let us hear what a reliable witness, Dr. Ray, says in his admirable work on Mental Hygiene:—

"Among these remoter agencies in the production of mental disease," he says, "I doubt if any one, except hereditary defects, is more common, at the present time, than excessive application of the mind when young. The immediate mischief may have seemed slight, or have readily disappeared after a total separation from books and studies, aided, perhaps, by change of scene; but the brain is left in a condition of peculiar impressibility which renders it morbidly sensitive to every adverse influence."

Of course, we do not mean to say that children in our schools are universally overtasked; the majority of them, no doubt, are fully equal to the duties imposed upon them. Still, many teachers take the same ground as Dr. Ellis, and they therefore cannot be too closely watched. We have in mind at this moment a young lady who is wearing herself out—pallid, thin, with stooping shoulders and contracted chest, turning her blood into water and possibly developing tubercle by excessive devotion to study—a splendid scholar, the admiration of her teacher and her parents—who ridicule the idea that she is doing herself the least harm. She is nothing but a student. It should not be forgotten that study is work. *Over*-study is *over*-work. Does any one in his senses doubt that *over*-work will kill? Such opinions as those advanced by Dr. Ellis, when addressed to a class of medical students may produce incalculable harm, for in their hands will be placed at a future day the responsibility of a personal application of these doctrines to the occasions of professional experience. And who is there of us who has not felt in his own professional life how much his practice and opinions have been influenced and shaped for years by the teachings of his medical preceptors?

THE NEW SYDENHAM SOCIETY'S PUBLICATIONS.—The volumes lately received from the Sydenham Society for 1861 comprise the first volume of Caspar's Forensic Medicine, Selected Monographs on various subjects, the Year Book for 1860, and three life-size plates from Hebra's Atlas of Skin Diseases.

The work on Forensic Medicine is one of much value, having already run through three editions, and been translated into nearly every language in Europe. The present translation, which has been made with much care, was carefully revised by the author himself, thus "bringing it abreast," as the translator states, "of the latest German edition." Among the most important chapters are those upon Protracted Gestation, Mummification, the Diagnosis of Blood Stains and Hæmin Crystals, Gun-shot Wounds, Burns, Poisonings, Rupture of the Coats of the Carotid Arteries (in persons hanged), Analysis of the Blood after Poisoning with Carbonic Acid Gas, the Pre-respiratory Movements of Deglutition, Injuries to the Fœtus in Utero, the Hydrostatic Test, &c. These chapters, as indeed the whole volume, will be found peculiarly interesting and instructive.

The monographs are, by Czermak on the Practical Use of the Laryngoscope; Dusch on Thrombosis of the Cerebral Sinuses; Schroeder Van der Kolk on Atrophy of the Brain; Radicke on the Application of Statistics to Medical Inquiries; and Esmarch on the Uses of Cold in Surgical Practice. This volume contains many illustrations.

The Year Book is a volume of nearly 600 pages, containing a third more matter than the one for the previous year; and the subjects are more conveniently grouped, being arranged with reference to cognate subjects.

The portraits of skin diseases are from Hebra's Atlas, and form the second fasciculus of the series. These drawings are from nature, and represent *Psoriasis diffusa, Icthyosis, Lupus serpiginosus,* and *Alopecia areata.*

These publications are well printed, and accord with those that have before appeared; deserving the attention of those who have not already availed themselves of the privileges of membership of this flourishing and most useful association.

THE following is the memorial which was sent to the President of the United States by the Standing Committee of the Sanitary Commission, asking for the Surgeon-General the simple justice of a court martial upon the charges which have been preferred against him. As our readers are aware, the court martial is now in progress.

To His Excellency the President of the United States.

SIR,—The United States Sanitary Commission, authorized by the government to act as a Commission of Inquiry and Advice in respect to the Sanitary interests of the National Forces, have been for more than two years and a half close and careful students of the medical and hygienic affairs of the army. They ought to be, they are thought by the people of the United States to be, they claim to be, better acquainted with the workings of the Medical Department, whose deficiencies, mistakes and necessities, it is their solemn duty to discover and obviate, than any other responsible body of witnesses. Trusting in their discretion, zeal and works, the people of the loyal States have made them their almoners, to the extent of seven million of dollars worth of sanitary stores, and a million of dollars in money. The disbursement of this immense charity has brought our agents into close and continual contact with the Medical Department, to whose steady and rapid improvement from the imperfect state in which we found it, to its present degree of surprising and gratifying efficiency, we are able to lend a most indisputable testimony. We attribute this immense improvement to the fact that for two years the Medical Department has been directed by Dr. W. A. Hammond, Surgeon-General; a man known to all impartial and competent judges as thoroughly scientific, highly endowed, large-minded, and an energetic and controlling administrator. He was selected for his office solely for fitness, and in our calm and deliberate judgment, his administration has more than justified all the high hopes and expectations of those who recommended him for the place.

We hear, from sources that do not permit us to doubt the fact, that cautious but systematic efforts are now making to remove Surgeon-General Hammond from office. In the name of some millions of constituents, in the name of the homes of this country, whose solicitude, liberality and watchfulness we represent, we respectfully and conscientiously protest against the secret tribunal and the indirect methods by which the good fame of the Surgeon-General has been already seriously, and we believe unjustly, aspersed. We protest, in our character of Experts, a body whose business it has been made to inquire and advise on this very subject, that the removal of Dr. Hammond would be as serious a blow at the lives, comfort and efficiency of the army as the enemy itself could inflict; that the science of the country, the humanity of its homes, and the army itself, would resent it as a cruel wrong and an alarming error; and we feel ourselves bound, in the interests of the soldiers in the field, and of those about to enter the service of the country, in defence of our own principles and convictions, and in the name of the science, the charity and the fair-mindedness of the nation, to beg that no further steps in this direction may be taken without a full and fair trial of Surgeon-General Hammond upon the charges alleged to have been secretly made against him.

Signed, H. W. Bellows,
December 29th, 1863. Wm. H. Van Buren,
Wolcott Gibbs,
Geo. T. Strong,
C. R. Agnew,
Standing Committee U. S. Sanitary Commission.

The following letter contains some interesting facts from a quarter proably new to most of our readers:—

Ft. Halleck, Idaho Ter., Dec. 29th, 1863.

Messrs. Editors,—Our command has enjoyed excellent health for the past two years, having lost but *three* men from disease, out of eight companies. A species of remittent fever, called by the citizens "mountain fever," is the prevailing disease. It is easily controlled by quinine. Pneumonia is unusually fatal, several citizens having died of it within the last year in this region. Does the altitude—6070 above the Gulf of Mexico—and the consequent rarity of the atmosphere, have any influence? This is the general impression of the inhabitants. Our meteorological table for the present month stands—Daily mean, about 18 degrees above zero. Coldest day last month, 13 degrees below zero. Have had no rain for ten months—but have awful snow storms. The soil is sandy and unfit for agriculture. The country is rich in minerals; gold, iron and coal in abundance.

Respectfully, &c., John H. Finfrock,
Asst. Surg. 11th O. V. C.

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26-26.

Wounded at Chickamauga.—The following extract from a letter recently received from a surgeon of volunteers at Chatanooga, will, we are sure, be read with interest.

"Whilst in the Field Hospital at Chatanooga, during the first six weeks after the battle of Chickamauga, I saw much suffering and death of course—for since the war began there has not been a great battle fought under so unfavorable circumstances for procuring comforts and even necessary supplies for the wounded. And yet the men were made comparatively comfortable in tents in the field.

"The weather was very favorable for treating the wounded; and above all, the, to me, remarkable cheerfulness of the sufferers did much toward restoring them to health.

"Of more than 3000 patients treated for all kinds of wounds (except slight ones, which were sent to Nashville immediately after the battle), but 208 deaths occurred during the first six weeks after the engagement.

"At this time all but 120 had so far recovered as to be able to be sent to Nashville, or home.

"Of the 120 remaining, one fourth, or 30, would not recover, perhaps; making 238 deaths out of 3000 wounded.—*Medical News.*

The mortality of the city of New York in 1863 was 25,196. Males, 13,266; females, 11,930. Adults, 10,596; children, 14,600.—The mortality in Philadelphia was 15,788, an increase over the year 1862 of 691, or 4·38 per cent.

VITAL STATISTICS OF BOSTON.

For the Week ending Saturday, January 23d, 1864.

DEATHS.

	Males.	*Females.*	*Total.*
Deaths during the week - - - - - - - -	55	43	98
Ave. mortality of corresponding weeks for ten years, 1853—1863,	40.6	40.4	81.0
Average corrected to increased population - - - - -	00	00	89.02
Death of persons above 90 - - - - - - - -	0	0	0

Mortality from Prevailing Diseases.

Phthisis.	Croup.	Scar. Fev.	Pneumon.	Variola.	Dysentery.	Typ. Fever.	Diphtheria.
13	2	11	10	0	0	5	4

Communications Received.—Ligature of the Subclavian Artery, by Dr. Armsby, of Albany; reported by Dr. M. R. Peck, of Glens Falls, N. Y.—Case of Fibrous Polypus of the Uterus, by Dr. Woodward, of Quincy.—Cases illustrating Conservative Military Surgery, by Dr. Brown, of Cambridge.

Died,—At Alexandria, Va., 10th inst., Dr. A. M. Huxley, of Goshen, Conn.

Deaths in Boston for the week ending Saturday noon, Jan. 23d, 98. Males, 55—Females, 43.—Amputation of thigh, 1—apoplexy, 1—asthma, 1—inflammation of the bowels, 2—congestion of the brain, 1—disease of the brain, 1—inflammation of the brain, 1—bronchitis, 2—consumption, 13—convulsions, 1—croup, 2—debility, 2—diarrhœa, 1—diphtheria, 4—dropsy, 4—dropsy of the brain, 2—erysipelas, 2—exhaustion, 1—scarlet fever, 11—typhoid fever, 5—hæmorrhage, 1—disease of the heart, 2—homicide, 1—infantile disease, 1—inflammation of leg, 1—disease of the liver, 1—congestion of the lungs, 5—inflammation of the lungs, 10—marasmus, 2—menorrhagia, 1—old age, 1—paralysis, 2—peritonitis, 1—pleurisy, 1—scrofula, 2—sore throat, 1—syphilis, 1—trismus nascentium, 1—tumor, 1—unknown, 2—inflammation of the uterus, 1—whooping cough, 1.

Under 5 years of age, 38—between 5 and 20 years, 10—between 20 and 40 years, 21—between 40 and 60 years, 16—above 60 years, 13. Born in the United States, 58—Ireland, 33—other places, 7.